

**PART 2**  
**REMARKS RESPONSIVE TO OFFICE ACTION**

Claims 1 - 21 were in this application. Claims 7, 14, and 21 were withdrawn from consideration in this application. Claim 5 is cancelled by this amendment. Claims 1 - 4, 6, 8 - 13, and 15 - 20 are amended. New claims 22 - 27 are presented by this amendment.

In response to the objection to claims 6, 13 and 20 under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim, the claims have been amended into single dependency form. They now depend, respectively, from independent claims 1, 8 and 15.

In response to the objection to claims 4 and 5 being duplicative, claim 5 has been cancelled.

Claims 1 - 6 have been rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Claim 1 has been amended to overcome this rejection. In particular, it has been specified in claim 1 that the method includes both analysing and representing an evolution of a biological system. Further, additional steps of claim 1 include monitoring and displaying, and subsequently evaluating and displaying for diagnosis or prognosis the evolution of the biological system...as indicated by the trajectories. It is accordingly submitted that claim 1 and those claims which depend thereon now produce a concrete, tangible and useful result by reciting the method in this way, in particular by displaying for diagnosis or prognosis the evolution of the biological system.

One of the main purposes of the invention is to provide clinicians and other persons interested in the evolution of biological systems, including physiological conditions, with the necessary diagnostic and prognostic tools to enable them to properly evaluate the

evolution of the biological system. Biological systems are highly complex to model, and typically involve interaction of numerous variables which cannot be represented intelligibly in a hyperspatial format. Accordingly, one aspect of the invention is directed towards determining sub-sets of these variables and mapping sub-sets of the variables to n-dimensional sub-spaces. In addition, sets of predetermined values of the variables are used to formulate at least one n-dimensional surface representing a predetermined state of the biological system n-dimensional sub-spaces. The manner in which the sub-spaces, trajectories and n-dimensional surfaces are displayed allow a vast quantity of data to be displayed and interpreted to the extent that a prognosis or diagnosis of the evolution of the biological system can readily be made. Accordingly, a concrete, tangible and useful result is arrived at by the present invention as now claimed.

Claims 1 - 6, 8 -13 and 15 - 20 have been rejected under 35 U.S.C. 102(b) as being anticipated by Maguire Jr. (Maguire Jr., F. Ecosystem simulation through use of models of subsystem response structures. Simulation, 1974, Vol. 23, No. 5, pages 149 - 158. All of the claims currently pending, and in particular independent claims 1, 8 and 15 have been amended with a view to distinguishing the invention even further over the prior art cited by the Examiner. In addition, new claim 22 and claims 23 to 27 which are dependent thereon are similarly in a form which distinguishes them clearly over the prior art of record. McGuire Jr. is directed towards a procedure for synthesising models and analysing the dynamics of ecological processes using a response surface approach. Only two dimensions are considered at any one time, and there is no teaching of how additional dimensions should be displayed or otherwise dealt with.

Nowhere in Maguire Jr. is there taught or suggested a method of analysing and representing an evolution of a biological system of the type newly claimed in claim one. In particular, Maguire Jr. does not teach or suggest determining first and second subsets of a series of variables which are mapped into first and second respective n-dimensional sub-spaces. Further, nowhere is there taught or suggested monitoring and displaying the evolution of a biological system using trajectories formed from subsets of the


variables of a biological system at different times. Maguire Jr. is silent on the step of evaluating and displaying for diagnosis or prognosis the evolution of the biological system as indicated by the trajectories, and utilising sets of predetermined values of the variables to formulate at least one n-dimensional surface representing a predetermined state of the biological system within each of the n-dimensional subspaces.

Similar considerations apply with regard to claims 8 and 15. As far as new independent claim 22 is concerned, the step of evaluating and displaying the evolution of the biological system as indicated by the trajectory utilising different sets of predetermined values of the variables to formulate first and second n-dimensional surfaces representing respective first and second different predetermined states of the biological system within the n-dimensional space is neither taught nor suggested by Maguire Jr. Further, the steps for predicting or projecting for diagnosis or prognosis, progression of the trajectory through to the first and second surfaces is neither taught nor suggested.

Furthermore, it is respectfully submitted that all of the dependent claims meet the requirements of 35 USC §102 as being dependent upon independent claims which have been argued above to be allowable. In addition, each of said dependent claims contain additional limitations which render these claims allowable over Maguire Jr.

For the above reasons, applicants respectfully request reconsideration and withdraw the outstanding rejections and earnestly solicit an indication of allowable subject matter.

Respectfully submitted,

  
Jon Carl Gealow, Reg. No. 22,386  
Jon C. Gealow & Associates  
2903 N. Bayview Lane  
McHenry, IL 60050-9629

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